

Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS) Program Overview

BAMS Industry Day

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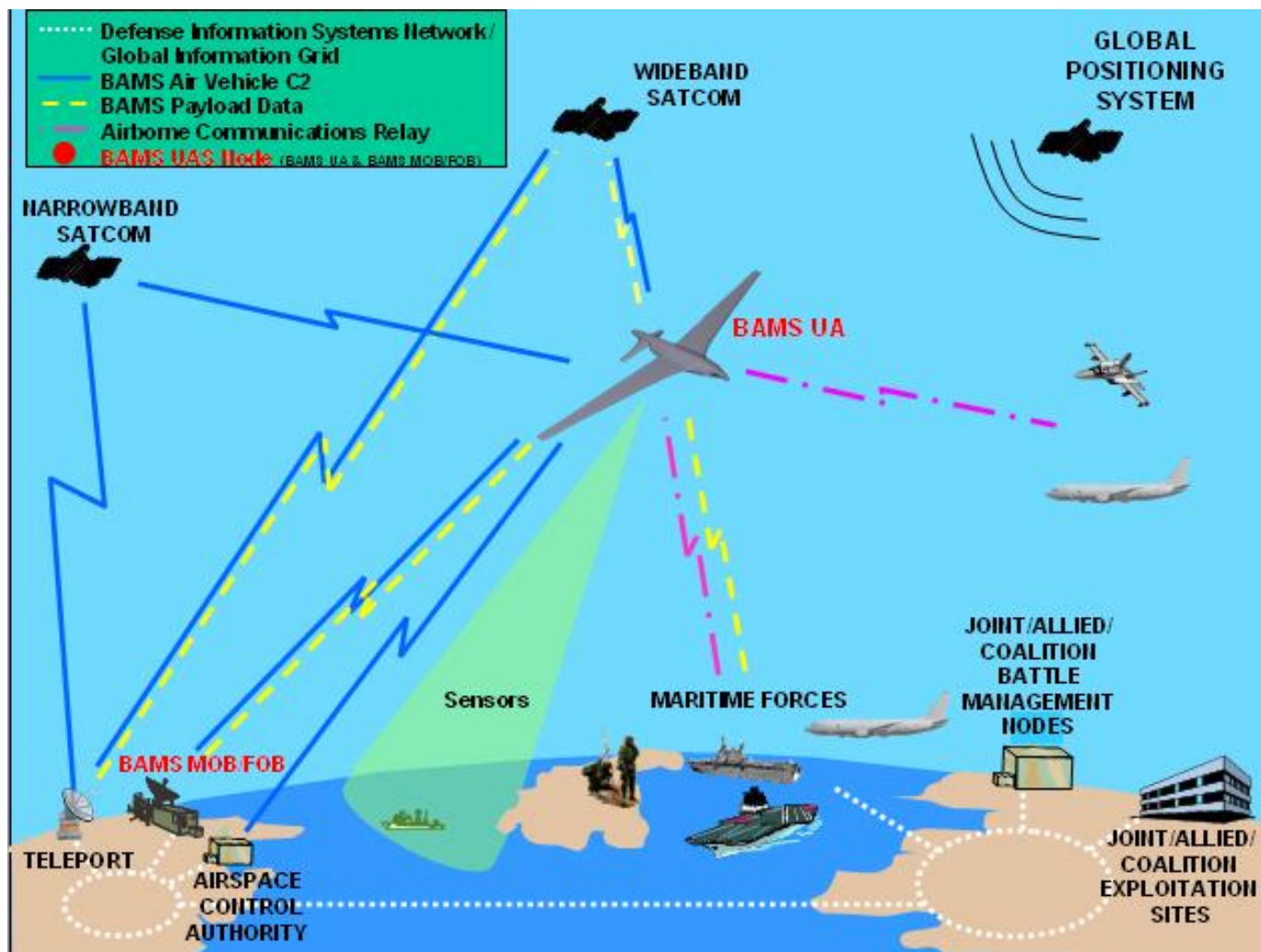


Program Activities

- **Requirements approval**
 - **BAMS ORD approved (May 2004)**
 - **ORD to CDD 'conversion' through JCIDS**
- **CONOPS approval**
- **Acquisition activities**
 - **Performance Based Specification development**
 - **Source Selection planning**
 - **Acquisition Strategy review**
- **RFP release planned for January 2007**
- **MS B planned for August 2007**
- **Contract Award planned for September 2007**



BAMS UAS OV-1





Requirements

- **Key Performance Parameters**
 - **Persistent Maritime ISR at Mission Radius for 24 hrs for 7 days at 85% Effective Time on Station (ETOS)**
 - » **ETOS presents significant challenge**
 - **Air vehicle speed and system reliability become increasingly significant as mission radius increases**
 - » **No more than 3 air vehicles airborne simultaneously**
 - **Minimum Air Vehicle Mission Radius of 2,000 nm**
 - » **Ensures access to Major Combat Operation (MCO) theaters from anticipated bases**
 - **Afloat Level II Payload Sensor Data Reception via Line of Sight**
 - » **System compatibility with existing shipboard systems**
 - » **Manpower, training and ship alteration limitations**
 - » **Level II to airborne MPRF (non-KPP: Threshold)**



Requirements

- **Key Performance Parameters**
 - **Net Ready**
 - » **Comply with DODAF integrated architectures**
 - » **Compliance with Key Interface Profiles**
 - » **Information Assurance**
 - » **Net Centric Operations Warfare (NCOW) Reference Model compliance**
 - **Minimum Operational Availability of 0.7 @ IOT&E and 0.8 @ IOC + 2 yrs**
 - » **Ao computed for single air vehicle with full mission payload**
 - » **Assumes Mission Control System (MCS) redundancy**
 - **Maritime target standoff classification (classified)**
 - » **Allows unmanned aircraft to determine own standoff sanctuary**



Notional Sensors

- **Established capability requirements:**
 - Detect, track, classify and identify maritime targets
- **Detection and Classification - Maritime Radar sensor**
 - 270 degree Field of Regard centered on nose (Threshold)
 - Steep grazing angles into sea clutter (Sea State 3)
 - Trade sensor versus vehicle performance
- **Identification - EO/IR sensor**
 - 270 degree Field of Regard centered on nose (Threshold)
 - Weather presents significant challenge in maritime environment
 - Less than 50% probability of cloud free LOS from altitude



Notional Sensors

- **Collaborative sensor – Electronic Support Measures**
 - **Basic LR-100 or equivalent capability**
 - **Include Automatic Identification System (AIS) capability**
 - **Include Specific Emitter Identification (SEI) capability**
- **Basic Communications Relay**
 - **Wide band equivalent of 2 Tactical Common Data Link systems**
 - **Employ Ethernet/Generic Framing Protocol (GFP) format (Annex B)**
 - **Narrow band dual full duplex (4 ARC 210 equivalent system)**

Space, Weight, and Power (SWaP) provisions to address future spirals for SIGINT and a more robust comms relay



Program Overview

- **Prime Contractor ...**

- **Responsible for total system performance**
- **Demonstrate CMMI Level 3 capability**
- **Provide the basic air vehicle, controlling station, payloads, interim support and final logistics planning**
- **Perform Risk Assessment**
 - » **Identify and track risk drivers**
 - » **Define risk mitigation plans**
 - » **Provide continuous risk assessment and predicted status**

- **Force Structure Guidance**

- **Provide sufficient assets to support a 4 year ramp up, 20 year sustainment and 4 year ramp down**
- **Maintain five continuous orbits world wide**



Program Overview

- **During SDD the system shall...**
 - **Demonstrate ability to provide payload data to maritime forces LOS and BLOS and through the Global Information Grid (GIG) architecture**
- **Wide Band SATCOM considerations**
 - **Commercial Ku Band has significant maritime coverage gaps**
 - **DoD policy requires Ka Band for BAMS UAS**
 - **X band provides access to additional bandwidth**
 - **Airborne Tri-band (X, Ka, Ku) radome and transceiver remain technical challenges**
- **Wide Band LOS considerations**
 - **DoD policy requires Ku Band for BAMS UAS**
 - **Ethernet/GFP (annex B) desired format**



Milestone B TRA Requirement



- **Potential offerrors should be aware that:**
 - **DoD is required by law to certify technology readiness**
 - » **Public Law 109-163 as part of the National Defense Authorization Act of FY 2006**
 - **The Technology Readiness Assessment (TRA) provides an independent assessment to the MDA as Certifying Official**
 - **The TRA is an “independent” input to the Certifying Official and not part of the source selection process**
 - **All Critical Technology Elements (CTEs) are required to have been demonstrated in a relevant environment before the program can receive Milestone B approval – Technology Readiness Level 6**
 - **All acquisition requirements considered, the Certifying Official will make the best TRA decision for the Navy**



Support Concept

- **Performance Based Logistics principles used to determine optimal support concept**
 - **Performance based agreements/partnerships with Navy & Industry**
 - **Key Overarching Metrics:**
 - » **Effective Time on Station (ETOS)**
 - » **Operational Availability (Ao)**
 - » **Mean Logistics Delay Time (MLDT)**
- **Potential for full/partial Contractor Logistics/Operator Support**
 - **Contractor maintains system at CONUS and OCONUS locations**
 - **Contractor performs launch and recovery functions**
 - **Potential for up to 50% operator support**
- **Two level maintenance concept (O to OEM/Depot)**
- **Potential to leverage commonality with other UASs**



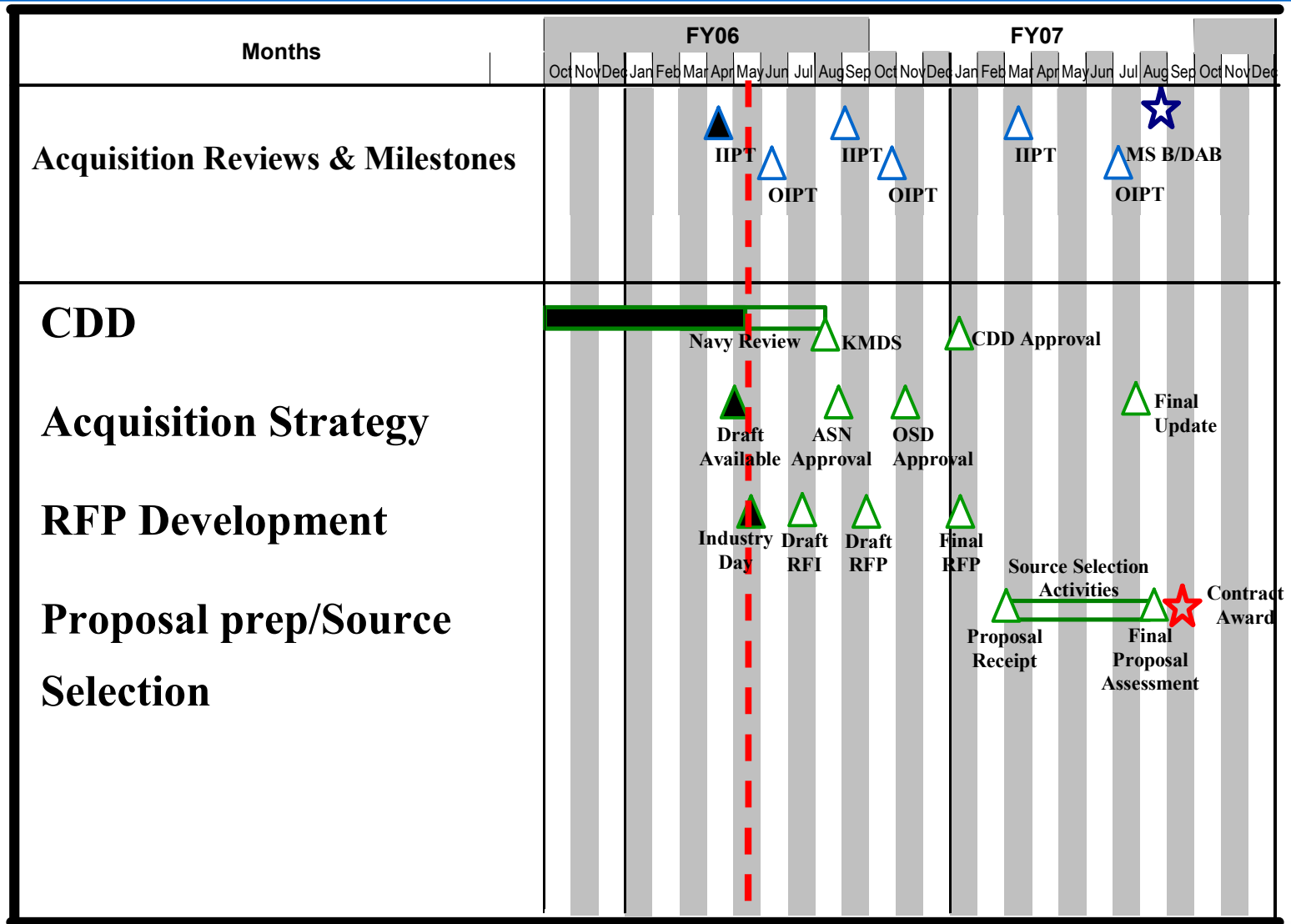
Overall Test & Evaluation Strategy



- **Integrated CT/DT/OT Test Team (ITT)**
 - **Developmental Test lead: VX-20**
 - **Operational Test Agency: COMOPTEVFOR**
 - **Operational Test Squadron: VX-1**
- **Contractor and Government Software Integration Labs**
- **Ground and flight tests observed/operated by Government test personnel**
- **Production representative system to be used for OPEVAL**

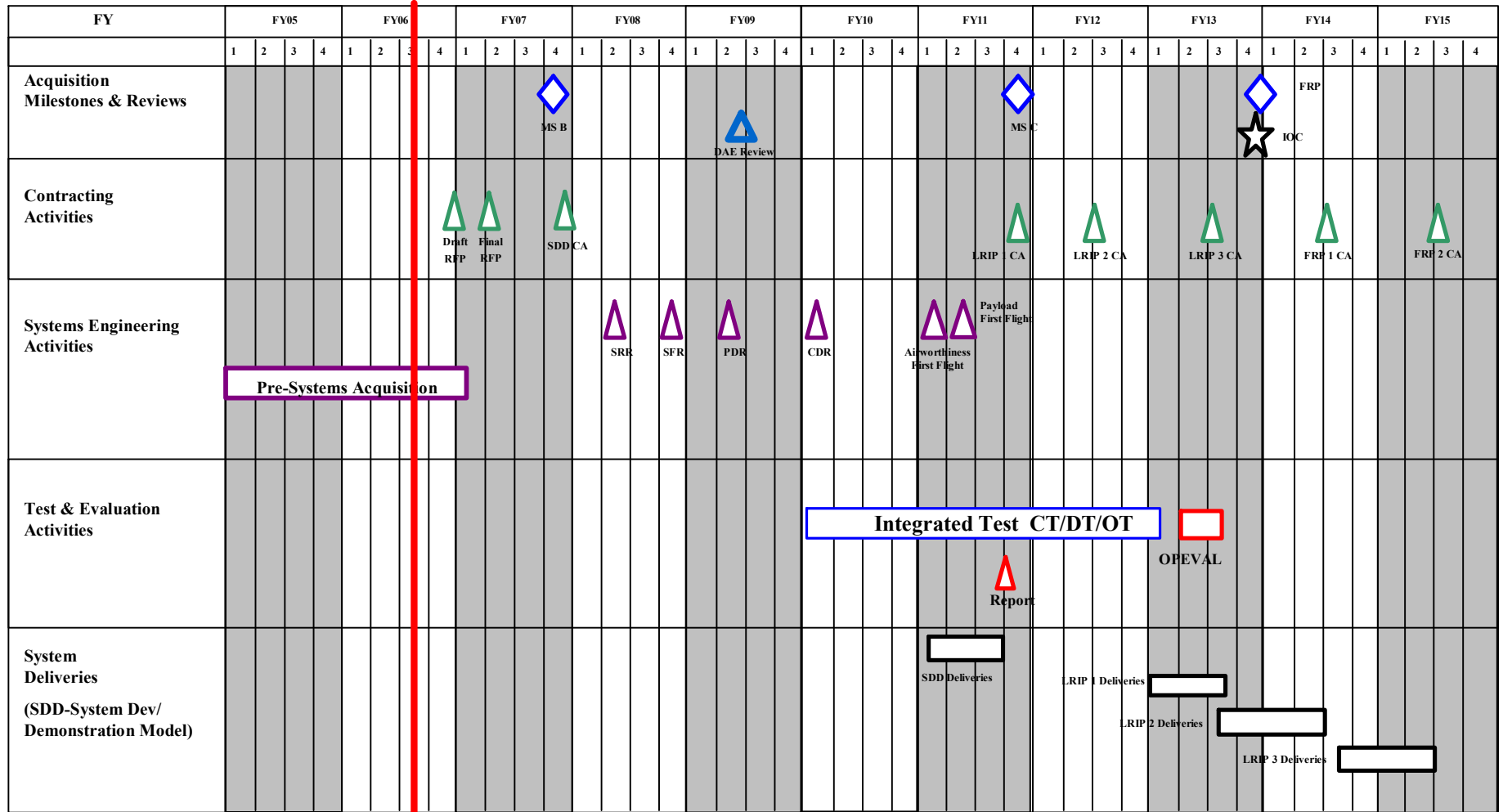


BAMS Schedule to MS B





Program Schedule

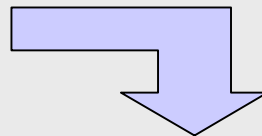




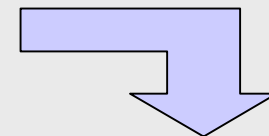
Anticipated Contracting Strategy



SDD (Including LRIP 1)
Full & Open Competition for
Prime Contractor
Cost Type
Quantities: SDD: TBD
LRIP 1: TBD



LRIP 2-3
Fixed Price Type (LRIP 2 & LRIP 3)
Advanced Procurement (Potentially)
Quantities: TBD



FRP
Fixed Price Type
Advanced Procurement (Potentially)
Quantities: TBD
(Multi-Year considerations)



Road Ahead for BAMS



- **Complete Performance Based Specification development**
- **Post Draft RFP during 4th Qtr FY06**
- **Achieve Acquisition Strategy approval by OSD in 1st Qtr FY07**
- **Obtain CDD approval in January 2007**
- **Release Final RFP in January 2007**
- **Conduct source selection activities during Spring/Summer 2007 for BAMS SDD contract**
- **Deliver Persistent Maritime ISR capability to the Fleet in FY13**

BAMS Program is healthy and on track!

